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software for automated genotype calling. Each of the relevant gene regions are PCR amplified from purified genomic DNA in a single reaction using the following oligonucleotide primer designs:

5	Gene	Primer	Sequence (5' - 3')
	RHD	RHDe4S	AGACAAACTGGGTATCGTTGC (SEQ ID NO: 1)
		RHDe4A	ATCTACGTGTTGCAGCCT (SEQ ID NO: 2)
10	RHD	RHDe9S	CCAAACCTTTAACATTAATTATGC (SEQ ID NO: 3)
		RHDe9A	TTGGTCATCAAAATATTAGCCTC (SEQ ID NO: 4)
	RHCE	RHCEe2S	TGTGCAGTGGGCAATCCT (SEQ ID NO: 5)
		RHCEe2A	CCACCATCCCAATACCTG (SEQ ID NO: 6)
15	RHCE	RHCEe5S	AACCACCCCTCTCTGGCCC (SEQ ID NO: 7)
		RHCEe5A	ATAGTAGGTGTTGAACATGGCAT (SEQ ID NO: 8)
	GYPB	GYPBe4S	ACATGTCTTCTTATTTGGACTTAC (SEQ ID NO: 9)
20		GYPBe4A	TTTGTCAAATATTAACATACTGGTAC (SEQ ID NO: 10)
	KEL	KELe6S	TCTCTCTCCTTAAAGCTTGGAA (SEQ ID NO: 11)
		KELe6A	AGAGGCAGGATGAGGTCC (SEQ ID NO: 12)
25	KEL	KELe8S	AGCAAGGTGCAAGAACACT (SEQ ID NO: 13)
		KELe8A	AGAGCTTGCCTGTGCC (SEQ ID NO: 14)
	FY	Promoter	TGTCCCTGCCAGAACCT (SEQ ID NO: 15)
		FYproA	AGACAGAAGGGCTGGGAC (SEQ ID NO: 16)
30	FY	FYe2S	AGTGCAGAGTCATCCAGCA (SEQ ID NO: 17)

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	FYe2A	TTCGAAGATGTATGGAATTCTTC (SEQ ID NO: 18)	
	JK Exon 9	JKe9S	CATGAACATTCTCTCCCATTG (SEQ ID NO: 19)
5		JKe9A	TTTAGTCCTGAGTTCTGACCCC (SEQ ID NO: 20)
	DI Exon 18	DIe19S	ATCCAGATCATCTGCCTGG (SEQ ID NO: 21)
		DIe19A	CGGCACAGTGAGGATGAG (SEQ ID NO: 22)
10	GP3A	GP3Ae3S	ATTCTGGGGCACAGTTATCC (SEQ ID NO: 23)
		GP3Ae3A	ATAGTTCTGATTGCTGGACTTCTC (SEQ ID NO: 24)

The above primer pairs comprise the corresponding forward and reverse primers, and may be referred to herein as SEQ ID NOS 1-24.

Multiplexed single nucleotide primer extension is performed using the following 5' tagged extension primers:

20	RHD Exon 4	GTGATTCTGTACGTGTCGCCGTCTGATCTTATCCTCCGTTCCCT (SEQ ID NO: 25)
	RHD Exon 9	GCGGTAGGTTCCCGACATATTTAACAGGTTGCTCCTAAATCT (SEQ ID NO: 26)
	RHCE Exon 2	GGATGGCCTTCGGTCCATTGGACGGCTTCCTGAGCCAGTTCCCT (SEQ ID NO: 27)
25	RHCE Exon 5	CGACTGTAGGTGCGTAACTCGATGTTCTGGCCAAGTGTCAACTCT (SEQ ID NO: 28)
	GYPB Exon 4	AGGGTCTCTACGCTGACGATTGAAATTGCTTATAGGAGAAA (SEQ ID NO: 29)
30	KEL Exon 6	AGCGATCTGGAGACCGTATTGGACTTCCTTAAACTTAACCGAA (SEQ ID NO: 30)
	KEL Exon 8	AGATAGAGTCGATGCCAGCTTCCTTGTCAATCTCCATCACTTCA (SEQ ID NO: 31)

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FY Promoter **GACCTGGGTGTCGATAACCTAGGCCCTCATTAGTCCTGGCTCTTA**  
(SEQ ID NO: 32)

FY Exon 2 **ACGCACGTCCACGGTGATTGGGGCAGCTGCTTCCAGGTTGGCA**  
(SEQ ID NO: 33)

5 JK Exon 9 **CGTGCCTCGTGTAGAATAACCCAGAGTCCAAAGTAGATGT**  
(SEQ ID NO: 34)

DI Exon 19 **GGCTATGATTCGCAATGCTTGTGCTGTGGTGGTGAAGTCCACGC**  
(SEQ ID NO: 35)

10 GP3A Exon 3 **AGAGCGAGTGACGCATACTTGGCCTGTCTTACAXGCCCTGCCTC**  
(SEQ ID NO: 36)

The above probes may be referred to herein as SEQ ID NOs 25-36. The DNA bases are represented by their single letter equivalents (A,C,G or T) and the letter X represents  
15 a C3 (phosphoramidite) spacer between the two adjacent DNA bases.

In this embodiment, the 12 bolded nucleotides in the 5' region of the extension probes are hybridized to a complementary DNA sequence that has been micro-arrayed onto

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sites. The PCR primers pairs in Table 1 represent sequences complementary to DNA regions containing SNPs of interest; of which the exact sequences of each primer pair and mixture of primer pairs have been specifically 5 optimized to amplify genomic DNA of interest as a mixture of 12 primer pairs. Although noted above, Table 2 further summarizes 12 novel extension primers specifically used together to detect the nucleotides of blood group and platelet antigen or HPA SNPs, simultaneously. The 10 extension primers represent a group of 12 novel nucleotide sequences, of which each are a combination of: 1) a unique 5' region necessary to direct hybridization to a micro-arrayed tag located in a specific spot in each microplate well, and 2) a 3' region complementary to and adjacent to a 15 SNP of a PCR-amplified DNA region containing the SNP of interest.

**Table 1. The PCR primers used in the 12-pair multiplex PCR format for multiple SNP detection.**

Antigen	SNP	Primer Name	Sequence 5' - 3'	Product Target	Size (bp)
RhD/RhCE	C/T	RHDe4S	AGACAAACTGGGTATCGTTGC	RHD	111
		RHDe4A	ATCTACGTGTTCCGAGCCT		
RhD/RhCE	A/G	RHDe9S	CCAAACCTTTAACATTAAATTATGC	RHD	98
		RHDe9A	TTGGTCATAAAATATTAGCCCTC		
RhC/Rhc	T/C	RHCEe2S	TGTGCAGTGGGCAATCT	RHCE	90
		RHCEe2A	CCACCACATCCCAATACCTG		
RhE/Rhe	C/G	RHCEe5S	AACCACCCCTCTCTGGCCC	RHCE	107
		RHCEe5A	ATAGTAGGTGTTAACATGGCAT		
GYPBS/GYPBs	T/C	GYPBe4S	ACATGTCTTCTTATTGGACTTAC	GPYB	103
		GYPBe4A	TTTGTCAAATATTAACATACTGGTAC		
K/k	T/C	KELe6S	TCTCTCTCTTAAAGCTTGGGA	KEL	142
		KELe6A	AGAGGCAGGATGAGGTCC		
Kp <sup>a</sup> /Kp <sup>b</sup>	T/C	KELe8S	AGCAAGGTGCAAGAACACT	KEL	100
		KELe8A	AGAGCTTGCCTGTGCC		
Fy/Fy <sup>0</sup>	T/C	FYproS	TGTCCCTGCCAGAACCT	Duffy Promoter	90
		FYproA	AGACAGAAGGGCTGGGAC		
Fy <sup>a</sup> /Fy <sup>b</sup>	G/A	FYe2S	AGTGCAGAGTCATCCAGCA	Duffy	122
		FYe2A	TTCGAAGATGTATGGAATTCTTC		
Jk <sup>a</sup> /Jk <sup>b</sup>	G/A	JKe9S	CATGAACATTCCTCCCATTG	Kidd	130
		JKe9A	TTTAGTCCTGAGTTCTGACCCC		
Di <sup>a</sup> /Di <sup>b</sup>	T/C	Di <sup>a</sup> 19S	ATCCAGATCATCTGCCTGG	Diego	90

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		Die19A	CGGCACAGTGAGGATGAG	Exon 19	
HPA-1a/b	T/C	GP3Ae3S	ATTCTGGGGCACAGTTATCC	GP3A	114
		GP3Ae3A	ATAGTTCTGATTGCTGGACTTCTC	Exon 3	

The above primers correspond to SEQ ID NOS 1-24, respectively, as outlined herein above.

Table 1A. Additional Blood Group and Platelet Antigen SNPs for Clinically Relevant Antigens.

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Antigen	SNP			Product Target	Size (bp)
A/O GalNAc/Del	G/T			ABO Exon 6	
A/B (GalNAc/Gal)	C/G			ABO Exon 7	
A/B (GalNAc/Gal)	G/A			ABO Exon 7	
A/B (GalNAc/Gal)	C/A			ABO Exon 7	
A/B (GalNAc/Gal)	G/C			ABO Exon 7	
M/N	G/A			MNS Exon 2	
M/N	T/G			MNS Exon 2	
MNS/MiI	C/T			MNS Exon 3	
RHD/Weak D Type 1	T/G			RHD Exon 6	
RHD/Weak D Type 2	G/C			RHD Exon 9	
RHD/Weak D Type 3	C/G			RHD Exon 1	
RHD/D nt602 Variants	C/G			RHD Exon 4	
RHD/'DAR' Variant	T/C			RHD Exon 7	
RHD/Weak D Type 5	C/A			RHD Exon 3	
RHD/D <sub>el</sub>	G/A			RHD IVS3+1	
RHD/D <sub>el</sub>	G/T			RHD Exon 6	
RHD/D <sub>el</sub>	G/A			RHD Exon 9	
RHD/RHD <sub>W</sub> nt506	A/T			RHD Exon 4	
RHCE/RhC	T/C			RHCE IVS2+1722	

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Each antigen listed on the left represents a blood group or HPA genotype and the single nucleotide polymorphism (SNP). Some genotypes are evaluated using more than one SNP because they differ by more than one nucleotide. Each PCR primer pair consists of a sense (Primer Name ending in S) and antisense (Primer Name ending in A) oligonucleotide (Sequence 5'-3') designed to amplify the DNA region containing the SNP for the antigen of interest. The target region (Product Target) and the amplified fragment (Size (bp)) are shown on the right. Note that 12 SNPs are evaluated for 19 different blood group and platelet antigens because some antigens have more than one SNP. In some cases an A or G SNP is included since the complementary DNA strand can be evaluated as it will contain the T or C SNP of interest.

Table 2. Extension probes used to detect the nucleotides of blood group and HPA SNPs.

Name	Sequence 5'-3'
RHD Exon 4	GTGATTCTGTACGTGTCGCCGTCTGATCTTATCCTCCGTTCCGT
RHD Exon 9	CGGGTAGGTTCCCGACATAATTAAACAGGTTGCTCTAAATCT
RHCE Exon 2	GGATGGCGTTCCGTCTATTGGACGGCTTCCTGAGCCAGTTCCCT
RHCE Exon 5	CGACTGTACGTGCGTACTCGATGTTGGCCAAAGTGTCAACTCT
GYPB Exon 4	AGGGTCTCTACGCTGACGATTGAAATTGCTTATAGGAGAAA
KEL Exon 6	AGGGATCTGCGAGACCGTATTGGACTTCCTTAAACCTTAACCGAA
KEL Exon 8	AGATAGACTCGATGCCAGCTTCCTTGTCAACTCCATCACTCA
FY Promoter	GACCTGGGTGTCGATACCTAGGCCCTATTAGTCCTGGGTCTTA
FY Exon 2	ACCCACGTOCCACGGTGAATTGGGGCAGCTGCTTCCAGGGTGGCA
JK Exon 9	CGTGGCGCTCGTGTAGAATAAACCCAGAGTCCAAAGTAGATGT
Di Exon 19	GGCTATGATTGCGAACTGCTTGTGCTGTGGTGGTGAAGTCCACGCC
GP3A Exon 3	AGAGCCACTGACCCATACTTGGGCTCCGTCTACAXGCCCTGCCTC

The above probes correspond to SEQ ID Nos 25-36, respectively, as identified herein above. The DNA bases are represented by their single letter equivalents (A, C, G or T) and the letter X represents a C3 (phosphoramidite) spacer between the two adjacent DNA bases.

The present invention also provides novel hybrid probes, wherein the preferred probes are listed in Table 2, but limited to said listing. Each extension probe is

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automatically generated using the SNPStream Software Suite of MegaImage, UHTGetGenos and QCReview.

It should be noted that the specific steps associated with the protocol exemplified in Example 1 are not intended to limit the teachings and methods of the present invention to the specific above protocol. Example 1 is provided to specify a preferred method in accordance with the present invention wherein a plurality of blood group and HPA SNPs are simultaneously analysed in a ultra high throughput multiplex automated system for the determination of the specific genotypes and accordingly the phenotypes associated therewith. Accordingly, it should be understood by one skilled in the art that the steps of Example 1 may be varied provided that such variations yield the preferred results of the present invention.

#### RESULTS

##### 1. GP3A Exon 3 SNP Scatter Plots.

The robotic UHT platform produces laser-fluorescence values for each sample which are represented in 'scatter plots' for the operator to review. A sample scatter plot is shown in Fig. 1 for the SNP analysis GP3A Exon 3, which represents the HPA-1a and HPA-1b antigens. As can be seen in Fig. 1 and Fig. 4, results are graphed using logarithmic and XY scatter plots (upper right). Green O, orange □ or blue 25 O sample designations represent CC, TC and TT SNP genotype calls, respectively, with corresponding graphical summaries appearing in the respective legends of each figure. No fluorescence represents an assay failure (FL) for that sample.

Scatter plots (as shown in Fig. 1 and Fig. 4) are generated preferably using SNPStream software suite and viewed through QCReview. It should be additionally noted that the present analysis is not limited to SNPstream or

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## Appendix A

## Genotype Results for updated 12 SNP CBS Panel

Sample ID	CHD1	CHD2	CHD3	CHD4	CHD5	CHD6	CHD7	CHD8	CHD9	CHD10
BB24401	FL									
BB24402	TT	FL	CC	CC	CC	TC	TC	TC	TC	TC
BB24407	TC	TT	TC							
BB24408	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24409	TC	TT	TC							
BB24410	TC	TT	TC							
BB24415	TC	TT	TC	TC	TC	TC	TC	TC	FL	TC
BB24416	FL									
BB24417	TC	TT	TC	FL	FL	TC	TC	TC	TC	TC
BB24420	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24421	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24422	TC	TT	TC	FL	FL	TC	TC	TC	TC	TC
BB24423	TC	TT	TC							
BB24424	TC	TT	TC	FL	TC	TC	TC	TC	TC	TC
BB24425	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24426	TC	TT	TC							
BB24427	TC	TT	TC							
BB24428	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24429	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24430	TC	TT	TC							
BB24431	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24432	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24433	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24434	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24435	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24436	TT	FL	CC	CC	CC	CC	CC	CC	TC	TC
BB24437	TC	TT	TC							
BB24438	TC	TT	TC							
BB24439	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24440	TC	TT	TC	FL	TC	TC	TC	TC	TC	TC
BB24444	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24448	TT	FL	CC	CC	CC	CC	CC	CC	FL	TC
BB24461	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24462	TT	FL	CC	CC	CC	CC	CC	CC	TC	TC
BB24463	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24464	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24465	TC	TT	TC							
BB24466	TC	TT	TC	FL	TC	TC	TC	TC	TC	TC
BB24467	TT	FL	CC	CC	CC	CC	CC	CC	TC	TC
BB24468	TC	TT	TC							
BB24469	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24470	TT	FL	CC	CC	CC	CC	CC	CC	TC	TC
BB24471	TC	TT	TC							
BB24472	TC	TT	TC							
BB24473	TC	TT	TC							
BB24474	TC	TT	TC							
BB24475	TC	TT	TC							
BB24476	TC	TT	TC	TC	TC	TC	TC	TC	CC	TC
BB24477	TC	TT	TC							
BB24478	TC	TT	TC							
BB24479	TC	TT	TC							
BB24480	TC	TT	TC							

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BB24481	TC	TT	TC	TC	CC
BB24482	TC	TT	TC	TC	TC
BB24483	TT	FL	CC	CC	TC
BB24484	TC	TT	TC	TC	TC
BB24485	TT	FL	CC	FL	TC
BB24486	TT	FL	CC	CC	TC
BB24487	TC	TT	TC	TC	TC
BB24488	TC	TT	TC	TC	TC
BB24489	TC	TT	TC	TC	TC
BB24491	TC	TT	TC	TC	TC
BB24492	TT	FL	CC	CC	TC
BB24493	TT	FL	CC	CC	TC
BB24494	FL	FL	FL	FL	FL
BB24495	TC	TT	TC	TC	TC
BB24496	TC	TT	TC	TC	TC
BB24497	TC	TT	TC	TC	CC
BB24499	TC	TT	TC	TC	TC
BB24504	TC	TT	TC	TC	TC
BB24505	TC	TT	TC	TC	TC
BB24506	TC	TT	TC	TC	CC
BB24507	TC	TT	TC	TC	CC
BB24512	TT	FL	CC	CC	TC
BB24513	TC	TT	TC	FL	TC
BB24516	TC	TT	TC	TC	CC
BB24517	TT	FL	CC	CC	TC
BB24518	TC	TT	TC	TC	TC
BB24519	TC	TT	TC	TC	CC
BB24522	TC	TT	TC	TC	CC
BB24523	FL	FL	FL	FL	FL
BB24524	TC	TT	TC	TC	CC
BB24525	TC	TT	TC	FL	TC
BB24526	TC	TT	TC	TC	CC
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BB24531	FL	FL	FL	TC	CC
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BB24535	TC	TT	TC	TC	TC
BB24536	TC	TT	TC	TC	TC
BB24537	TC	TT	TC	TC	CC
BB24538	TC	TT	TC	TC	CC
BB24539	TC	TT	TC	TC	CC
BB24540	TC	TT	TC	TC	TC
BB24541	TC	TT	TC	FL	TC
BB24542	TC	TT	TC	TC	CC
BB24543	TC	TT	TC	TC	CC
BB24547	FL	FL	FL	FL	FL
BB24548	TT	FL	CC	CC	TC
BB24549	TT	FL	CC	CC	FL
BB24550	TC	TT	TC	TC	TC
BB24552	TC	TT	TC	TC	TC
BB24553	TC	TT	TC	TC	CC
BB24554	TC	TT	TC	FL	TC

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BB24555	TC	TT	TC	TC	TC
BB24556	TC	TT	TC	TC	CC
BB24557	TC	TT	TC	TC	CC
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BB24559	TC	TT	TC	TC	TC
BB24560	TT	FL	CC	CC	CC
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BB24562	TC	TT	TC	TC	CC
BB24563	TT	FL	CC	CC	TC
BB24564	TC	TT	TC	TC	CC
BB24565	TC	TT	TC	TC	TC
BB24566	TT	FL	CC	CC	TC
BB24567	TC	TT	TC	TC	CC
BB24568	TC	TT	TC	TC	CC
BB24569	TC	TT	TC	TC	TC
BB24570	TC	TT	TC	FL	TC
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BB24587	TC	TT	TC	TC	CC
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BB24602	TC	TT	TC	TC	CC
BB24603	TC	TT	TC	FL	TC
BB24604	TC	TT	TC	TC	TC
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BB24626	TC	TT	TC	TC	CC
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BB24629	FL	FL	FL	FL	FL
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BB24631	TC	TT	TC	FL	TC
BB24632	TC	TT	TC	TC	TC
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BB24636	TC	TT	TC	FL	TC
BB24637	TC	TT	TC	FL	TC
BB24638	TC	TT	TC	TC	TC
BB24639	TT	FL	CC	CC	TC
BB24640	TC	TT	TC	TC	CC
BB24641	TT	FL	CC	CC	TC
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BB24654	TC	TT	TC	TC	TC
BB24655	TT	FL	CC	CC	TC
BB24656	TT	FL	CC	CC	TC
BB24657	FL	FL	FL	FL	FL
BB24658	TT	FL	CC	CC	TC
BB24659	TC	TT	TC	TC	TC
BB24660	TT	FL	CC	CC	TC
BB24661	TC	TT	TC	TC	TC
BB24662	TC	TT	TC	TC	TC
BB24663	TC	TT	TC	TC	TC
BB24664	TC	TT	TC	TC	TC
BB24665	TT	FL	FL	CC	TC
BB24666	TC	TT	TC	FL	TC
BB24667	TC	TT	TC	TC	CC
BB24668	TC	TT	TC	TC	CC
BB24669	TC	TT	TC	TC	CC
BB24670	TC	TT	TC	TC	CC
BB24672	TC	TT	TC	TC	TC
BB24673	TC	TT	TC	TC	TC
BB24674	TC	TT	TC	TC	CC
BB24675	TC	TT	TC	TC	TC
BB24676	TC	TT	TC	FL	TC
BB24678	TT	FL	CC	CC	TC
BB24679	TC	FL	TC	TC	TC
BB24680	TC	TT	TC	TC	CC
BB24681	TC	TT	TC	TC	TC
BB24682	TC	TT	TC	TC	TC
BB24683	TT	FL	CC	CC	TC

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BB24684	TC	TT	TC	TC	CC
BB24685	TC	TT	TC	TC	CC
BB24686	TC	TT	TC	TC	CC
BB24687	TC	TT	TC	TC	TC
BB24688	TT	FL	CC	CC	TC
BB24689	TC	TT	TC	TC	CC
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BB24695	TT	FL	CC	CC	TC
BB24696	TC	TT	TC	TC	CC
BB24697	TC	TT	TC	TC	TC
BB24698	TC	TT	TC	TC	CC
BB24699	TC	TT	TC	TC	TC
BB24700	FL	FL	FL	FL	FL
BB24701	TT	FL	CC	CC	TC
BB24702	TT	FL	CC	CC	TC
BB24703	TT	FL	CC	CC	TC
BB24704	TC	TT	TC	FL	TC
BB24705	TC	TT	TC	TC	TC
BB24706	TT	FL	FL	CC	TC
BB24707	TC	TT	TC	TC	CC
BB24708	TC	TT	TC	FL	TC
BB24709	TC	TT	TC	TC	TC
BB24710	TC	TT	TC	TC	CC
BB24711	TC	FL	TC	TC	TC
BB24712	TC	TT	TC	TC	TC
BB24713	TC	FL	TC	FL	TC
BB24714	TT	FL	CC	CC	TC
BB24715	TT	FL	CC	CC	TC
BB24716	TC	TT	TC	TC	CC
BB24717	TC	TT	TC	TC	TC
BB24718	TC	TT	TC	TC	TC
BB24719	TC	TT	TC	TC	TC
BB24720	TC	TT	TC	TC	CC
BB24721	TC	TT	TC	TC	TC
BB24722	TC	TT	TC	TC	TC
BB24723	TC	TT	TC	TC	CC
BB24724	TC	TT	TC	TC	TC
BB24725	TT	FL	CC	CC	TC
BB24726	TC	TT	TC	TC	TC
BB24727	TC	TT	TC	TC	CC
BB24728	TC	TT	TC	TC	TC
BB24729	TC	TT	TC	FL	TC
BB24730	TC	FL	TC	TC	CC
BB24731	TC	TT	TC	TC	CC
BB24732	TT	FL	CC	CC	TC
BB24733	TC	TT	TC	TC	TC
BB24734	TC	TT	TC	TC	CC
BB24735	TT	FL	CC	CC	TC
BB24736	TC	TT	TC	TC	TC
BB24737	TC	TT	TC	FL	TC
BB24738	TT	FL	CC	CC	TC
BB24739	TT	FL	CC	CC	TC

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BB24740.	FL	FL	FL	FL	FL
BB24741	TC	TT	TC	TC	TC
BB24742	TC	TT	TC	TC	TC
BB24743	TC	TT	TC	TC	TC
BB24744	TC	TT	TC	TC	TC
BB24745	TC	TT	TC	TC	TC
BB24746	TC	TT	TC	TC	CC
BB24747	TC	TT	TC	TC	TC
BB24748	TC	TT	TC	TC	CC
BB24749	TT	FL	CC	CC	CC
BB24750	TC	TT	TC	TC	TC
BB24751	TC	TT	TC	TC	TC
BB24752	TC	TT	TC	TC	TC
BB24753	FL	FL	FL	FL	FL
BB24754	TC	TT	TC	TC	CC
BB24755	TT	FL	CC	CC	TC
BB24756	TC	FL	TC	TC	CC
BB24757	TC	TT	TC	FL	TC
BB24758	TC	TT	TC	TC	TC
BB24759	TC	TT	TC	TC	TC
BB24760	TC	TT	TC	TC	TC
BB24761	TC	TT	TC	TC	CC
BB24762	TC	TT	TC	TC	TC
BB24763	TC	TT	TC	TC	FL
BB24764	TT	FL	CC	TC	TC
BB24765	TC	FL	TC	TC	CC
BB24766	TC	TT	TC	FL	TC
BB24767	TC	TT	TC	TC	TC
BB24768	TC	TT	TC	FL	TC
BB24769	TC	TT	TC	TC	CC
BB24770	TT	FL	CC	CC	CC
BB24771	TC	TT	TC	TC	TC
BB24772	TC	TT	TC	TC	TC
BB24773	TC	TT	TC	TC	TC
BB24774	TC	TT	TC	TC	CC
BB24775	TC	TT	TC	TC	TC
BB24776	TC	TT	TC	TC	TC
BB24777	TC	TT	TC	TC	TC
BB24778	TC	TT	TC	TC	CC
BB24779	TC	FL	TC	TC	CC
BB24780	TC	TT	TC	TC	TC
BB24781	TC	TT	TC	TC	TC
BB24782	TC	TT	TC	TC	TC
BB24783	TT	FL	CC	CC	TC
BB24784	TC	TT	TC	TC	TC
BB24785	TC	TT	TC	TC	TC
BB24786	TC	TT	TC	TC	TC
BB24787	TC	TT	TC	TC	TC
BB24788	TC	TT	TC	TC	CC
BB24789	TC	TT	TC	TC	TC
BB24790	TT	FL	CC	CC	TC
BB24791	TT	FL	CC	FL	TC
BB24792	TC	TT	TC	TC	CC
BB24793	TT	FL	CC	CC	FL
BB24794	TC	TT	TC	TC	CC
BB24795	TC	TT	TC	TC	TC

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BB24796	TC	TT	TC	TC	TC
BB24797	TC	TT	TC	TC	TC
BB24798	TC	TT	TC	TC	TC
BB24799	TC	TT	TC	TC	TC
BB24800	TC	TT	TC	TC	TC
BB24801	FL	FL	FL	FL	FL
BB24803	TC	TT	TC	TC	CC
BB24804	TT	FL	CC	CC	TC
BB24805	TC	TT	TC	TC	CC
BB24806	TC	TT	TC	TC	CC
BB24807	TC	TT	TC	FL	TC
BB24808	TC	TT	TC	TC	TC
BB24809	TC	TT	TC	TC	TC
BB24810	TC	TT	TC	TC	CC
BB24811	FL	FL	FL	FL	FL
BB24812	TC	TT	TC	TC	TC
BB24815	TC	TT	TC	TC	TC
BB24817	TC	TT	TC	TC	TC
BB24818	TC	TT	TC	TC	TC
BB24819	TC	TT	TC	TC	CC
BB24820	TC	TT	TC	TC	TC
BB24821	TT	FL	CC	CC	TC
BB24823	TC	TT	TC	TC	TC
BB24824	TC	TT	TC	TC	TC
BB24826	TC	TT	TC	TC	TC
BB24827	TT	FL	CC	TC	TC
BB24830	TC	TT	TC	TC	TC
BB24831	TC	TT	TC	TC	CC
BB24832	TT	FL	CC	CC	TC
BB24833	TC	TT	TC	TC	TC
BB24834	TC	TT	TC	TC	CC
BB24836	TC	TT	TC	TC	TC
BB24837	TC	TT	TC	TC	TC
BB24838	TC	TT	TC	TC	TC
BB24839	TC	TT	TC	TC	CC
BB24841	TC	TT	TC	TC	TC
BB24842	TC	TT	TC	TC	TC
BB24843	TT	FL	FL	TC	FL
BB24844	FL	FL	FL	FL	FL
BB24847	TC	TT	TC	TC	CC
Q1H2O	FL	FL	FL	FL	FL
Q2H2O	FL	FL	FL	FL	FL
Q3H2O	FL	FL	FL	FL	FL
Q4H2O	FL	FL	FL	FL	FL

	RHD1	RHD2	RHD3	RHD4	RHD5
Sample FL	15	86	20	54	23
Sample Pass	357	286	352	318	349
Call Rate	95.97%	76.88%	94.62%	86.48%	93.82%
Genotypes (N)					
XX (TT)	64	286	0	0	0
XY (TC)	293	0	293	260	246
YY (CC)	0	0	59	58	103
Allele Freq					
X (p)	58.96%	100.00%	41.62%	40.88%	35.24%
Y (q)	41.04%	0.00%	58.38%	59.12%	64.76%

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18	17	17	15	16	16
354	355	355	357	356	356
95.16%	95.43%	95.43%	95.97%	95.70%	95.70%
0	0	0	348	112	263
28	1	2	7	155	89
326	354	353	2	89	4
3.95%	0.14%	0.28%	98.46%	53.23%	86.38%
96.05%	99.86%	99.72%	1.54%	46.77%	13.62%

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Sample ID	Sample FL	Pass Rate
FL	1	91.7%
CC	1	91.7%
TC	0	100.0%
TC	1	91.7%
FL	1	91.7%
TC	1	91.7%
CC	0	100.0%
TT	0	100.0%
TC	1	91.7%
TT	0	100.0%
TC	1	91.7%
TC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TT	0	100.0%
TT	0	100.0%
TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
TC	1	91.7%
TT	0	100.0%
TT	0	100.0%
TC	0	100.0%
TC	1	91.7%
TC	0	100.0%
CC	2	83.3%
CC	0	100.0%
CC	1	91.7%
TC	0	100.0%
TC	0	100.0%
TC	1	91.7%
TC	1	91.7%
TC	1	91.7%
TC	0	100.0%
CC	1	91.7%
TC	0	100.0%
CC	0	100.0%
CC	0	100.0%
TT	0	100.0%
TC	0	100.0%
CC	0	100.0%

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- 65 -

TT		0	100.0%
TC		0	100.0%
TC		1	91.7%
TC		0	100.0%
TC		2	83.3%
TT		1	91.7%
CC		0	100.0%
TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
CC		1	91.7%
TC		1	91.7%
FL			
TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
CC		0	100.0%
TC		1	91.7%
CC		1	91.7%
TT		0	100.0%
TT		1	91.7%
TC		0	100.0%
CC		0	100.0%
TT		0	100.0%
FL			
TC		0	100.0%
TT		1	91.7%
TC		0	100.0%
TC		1	91.7%
TC		0	100.0%
TC		0	100.0%
CC		0	100.0%
FL			
TC		0	100.0%
CC		0	100.0%
TT		1	91.7%
TC		0	100.0%
TT		0	100.0%
TC		0	100.0%
TC		0	100.0%
TT		0	100.0%
TC		0	100.0%
TC		1	91.7%
CC		0	100.0%
TT		0	100.0%
FL			
TC		1	91.7%
TC		2	83.3%
CC		0	100.0%
CC		0	100.0%
TT		0	100.0%
TC		1	91.7%

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**PCT/CA 2005/000250**  
**06 DECEMBER 2005 06 - 12.05**

TT		0	100.0%
TT		0	100.0%
TC		0	100.0%
TC		0	100.0%
TC		0	100.0%
CC		1	91.7%
TC		1	91.7%
TC		0	100.0%
TC		1	91.7%
TC		0	100.0%
TC		0	100.0%
TC		1	91.7%
CC		0	100.0%
TT		0	100.0%
CC		0	100.0%
CC		1	91.7%
TT		0	100.0%
TC		1	91.7%
CC		0	100.0%
CC		1	91.7%
CC		1	91.7%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
CC		2	83.3%
CC		0	100.0%
TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
TC		1	91.7%
CC		1	91.7%
TC		0	100.0%
TT		1	91.7%
TC		0	100.0%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
CC		1	91.7%
TT		1	91.7%
TT		0	100.0%
TC		0	100.0%
TT		0	100.0%
TT		0	100.0%
CC		0	100.0%
TT		0	100.0%
TT		1	91.7%
TC		0	100.0%
TC		2	83.3%
TC		2	83.3%
CC		0	100.0%
TC		1	91.7%
CC		1	91.7%
TC		1	91.7%
TT		0	100.0%

**PCT/CA 2005/000250**  
**06 DECEMBER 2005 06 - 12.05**

- 67 -

TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
FL	0	100.0%
TT	0	100.0%
TC	1	91.7%
TC	0	100.0%
TC	1	91.7%
TC	0	100.0%
CC	0	100.0%
CC	1	91.7%
TT	1	91.7%
TC	0	100.0%
TC	1	91.7%
CC	0	100.0%
TT	1	91.7%
CC	0	100.0%
TT	0	100.0%
CC	4	66.7%
CC	0	100.0%
TT	1	91.7%
TC	0	100.0%
TC	0	100.0%
TT	0	100.0%
FL	0	100.0%
TC	0	100.0%
TT	0	100.0%
TT	0	100.0%
CC	0	100.0%
TC	1	91.7%
TC	1	91.7%
FL	0	100.0%
TC	1	91.7%
TC	0	100.0%
TC	1	91.7%
TT	0	100.0%
TT	0	100.0%
TT	0	100.0%
TC	4	66.7%
TC	1	91.7%
TC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TT	0	100.0%
TC	1	91.7%
TC	1	91.7%
TT	1	91.7%
TT	0	100.0%
TT	0	100.0%
TT	0	100.0%
TT	1	91.7%

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PCT/CA 2005/000250  
 06 DECEMBER 2005 06 - 12.05

TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
TT		0	100.0%
TT		1	91.7%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
TC		0	100.0%
TC		0	100.0%
TC		1	91.7%
CC		1	91.7%
TC		0	100.0%
TT		0	100.0%
TC		0	100.0%
TC		0	100.0%
FL		12	100.0%
CC		1	91.7%
TC		1	91.7%
CC		1	91.7%
TC		1	91.7%
TT		0	100.0%
TC		2	83.3%
TT		0	100.0%
TC		1	91.7%
TT		0	100.0%
TC		0	100.0%
CC		1	91.7%
TC		0	100.0%
TT		2	83.3%
TT		1	91.7%
TC		1	91.7%
CC		0	100.0%
TC		0	100.0%
TT		0	100.0%
CC		0	100.0%
TC		0	100.0%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
TT		0	100.0%
CC		1	91.7%
TT		0	100.0%
TC		0	100.0%
TC		0	100.0%
CC		1	91.7%
TT		1	91.7%
TC		0	100.0%
CC		1	91.7%
TC		0	100.0%
TC		0	100.0%
TT		1	91.7%
TT		0	100.0%
TC		0	100.0%
CC		1	91.7%
TC		1	91.7%
TC		0	100.0%
TT		0	100.0%
TT		1	91.7%
CC		1	91.7%
TC		0	100.0%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
TT		0	100.0%
TT		1	91.7%
TC		0	100.0%
CC		1	91.7%
TC		0	100.0%
TC		0	100.0%
TT		1	91.7%
TT		0	100.0%
TC		1	91.7%
CC		1	91.7%
TC		1	91.7%

12/06/2005 16:20 FAX 613 230 6706

OGILVY RENAULT

040

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06 DECEMBER 2005 06 - 12.05

FL		
TC	0	100.0%
TT	0	100.0%
TT	0	100.0%
TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
TT	1	91.7%
TC	0	100.0%
TC	0	100.0%
TC	0	100.0%
FL		
FL	1	91.7%
TT	1	91.7%
TT	1	91.7%
TC	1	91.7%
TC	0	100.0%
TC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TC	0	100.0%
TC	2	83.3%
CC	1	91.7%
CC	1	91.7%
TC	1	91.7%
TC	0	100.0%
TC	1	91.7%
CC	0	100.0%
CC	1	91.7%
TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
TC	0	100.0%
CC	0	100.0%
TC	0	100.0%
TT	0	100.0%
TC	0	100.0%
TT	2	83.3%
CC	0	100.0%
CC	0	100.0%
CC	0	100.0%
TC	1	91.7%
TC	0	100.0%
TT	0	100.0%
TC	1	91.7%
CC	3	75.0%
TC	0	100.0%
TC	2	66.7%
CC	0	100.0%
TC	0	100.0%

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**PCT/CA 2005/000250**  
**06 DECEMBER 2005 06 - 12.05**

TC		0	100.0%
TT		0	100.0%
TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
FL		1	91.7%
FL		1	91.7%
CC		1	91.7%
TT		0	100.0%
CC		0	100.0%
CC		1	91.7%
TC		0	100.0%
CC		0	100.0%
TT		0	100.0%
FL		0	100.0%
CC		0	100.0%
TC		0	100.0%
TT		0	100.0%
CC		0	100.0%
TC		0	100.0%
CC		0	100.0%
TT		1	91.7%
TT		0	100.0%
TT		0	100.0%
TC		0	100.0%
TT		1	91.7%
TC		0	100.0%
TC		1	91.7%
TC		0	100.0%
CC		0	100.0%
CC		0	100.0%
TT		0	100.0%
TC		0	100.0%
CC		0	100.0%
TC		0	100.0%
TT		0	100.0%
TC		6	50.0%
FL		0	100.0%
TT		0	100.0%
FL		12	0.0%

AMENDED SHEET	
17	
355	
95.43%	
87	
178	
90	
49.58%	
50.42%	